

Title (en)  
Hydraulically-operated micromanipulator apparatus

Title (de)  
Hydraulisch gesteuerter Mikromanipulator

Title (fr)  
Micromanipulateur à commande numérique

Publication  
**EP 0906813 A3 20000105 (EN)**

Application  
**EP 98307077 A 19980903**

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Abstract (en)  
[origin: EP0906813A2] A hydraulically-operated micromanipulator apparatus is disclosed. The micromanipulator apparatus comprises: a micromanipulator fine control unit including an operating-side piston finely movable with respect to an operating-side hydraulic cylinder and fine control means, either the operating-side piston or the operating-side hydraulic cylinder being stationarily retained, while the rest being finely operable by the fine control means; a hydraulically-operated micromanipulator including an actuating-side piston finely movable with respect to an actuating-side hydraulic cylinder and a fine displacement member, the actuating-side hydraulic cylinder being connected to said operating-side hydraulic cylinder through a hose, either the actuating-side piston or the actuating-side hydraulic cylinder being stationarily retained, while the rest being attached to the fine displacement member; and compensating means for compensating a pressure change of the hydraulic fluid between said operating-side hydraulic cylinder and said actuating-side hydraulic cylinder when ambient temperature changes. <IMAGE>

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CPC (source: EP US)  
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Citation (search report)  
• [YA] US 4679976 A 19870714 - NARISHIGE EIICHI [JP], et al  
• [Y] US 4946329 A 19900807 - KRUEGER JOHN W [US]  
• [A] PATENT ABSTRACTS OF JAPAN vol. 018, no. 454 (P - 1791) 24 August 1994 (1994-08-24)

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